



# Internal Audit Report

Emergency Management Department  
December 2000



### **Audit Team Members**

**George Miller, Audit Manager**

**Sandy Chockey, IS Audit Manager**

**Tom Fraser, Associate Auditor**

**Susan Huntley, Associate Auditor**

# Internal Audit Department

---

301 W Jefferson • 10th Floor • Phx • AZ • 85003 • (602) 506-1585 • Fax (602) 506-8957



December 15, 2000

Andrew Kunasek, Chairman, Board of Supervisors  
Fulton Brock, Supervisor, District I  
Don Stapley, Supervisor District II  
Janice K. Brewer, Supervisor District IV  
Mary Rose Wilcox, Supervisor, District V

We have completed our FY 2001 review of the Maricopa County Emergency Management Department (MCEM). The audit was performed in accordance with the annual audit plan that was approved by the Board of Supervisors. Overall, we found MCEM operations to be effective and in compliance with applicable laws, regulations, and County policies. We also identified areas for improvement. These, along with our recommendations, are detailed in the attached report. The report highlights are:

- Password controls over MCEM's Emergency Information System are not adequate to ensure system security and integrity. Also, passwords are not required to access MCEM's major system; users are not properly restricted, which increases the risk for data destruction and or unauthorized changes.
- MCEM has not developed a documented and tested disaster recovery plan for its automated systems, which increases the risk that systems may not be quickly recovered in the event of a disaster.
- The County does not appear to be exposed to significant legal or financial risk if local city/town emergency plans are found to be inadequate. However, the County may experience adverse publicity, from the public and media, if these emergency plans do not function as intended.

Attached are the report summary, detailed findings, recommendations, and MCEM's response. We have reviewed this information with MCEM management and appreciate the excellent cooperation provided by the entire department. If you have questions or wish to discuss items presented in this report, please contact George Miller at 506-1586.

Sincerely,

A handwritten signature in cursive script that reads "Ross L. Tate".

Ross L. Tate  
County Auditor



## **Table of Contents**

<b>Executive Summary</b>	<b>1</b>
<b>Introduction</b>	<b>3</b>
<b>Department Accomplishments</b>	<b>8</b>
<b>Detailed Information</b>	<b>9</b>
<b>Department Response</b>	<b>16</b>

## **Executive Summary**

### **System Security (Page 9)**

The Maricopa County Emergency Management Department's (MCEM) password controls are not adequate to ensure the security and integrity of the department's Emergency Information System. Network passwords do not expire. Additionally, passwords are not required to access MCEM's major system and some users are not properly restricted to update functions. MCEM should improve its password controls and restrict access, as appropriate, to its systems.

### **Disaster Recovery Plan (Page 10)**

MCEM has not developed a documented and tested disaster recovery plan. The department does not have assurance that its systems can be timely recovered in the event of a disaster. MCEM should develop, document, and periodically test its disaster recovery plan.

### **Information System Service Charges (Page 11)**

We found invoices and supporting documentation, detailing information system services provided to MCEM by the Maricopa County Department of Transportation (MCDOT), to be complete and accurate. We also found that MCEM approves payment of some invoices and journal voucher billings, for these services, without first reviewing back-up documentation supporting the charges. This omission exposes the County to financial risk. MCEM should strengthen controls over these areas.

### **Emergency Plans (Page 13)**

The County does not appear to be exposed to any significant legal or financial risks if local City/town emergency plans are found to be inadequate. The County may experience adverse publicity, from the public and media, if these emergency plans do not function as intended.

## **Financial Reporting (Page 14)**

Our review of the County's recording and reporting of MCEM revenues and expenditures shows MCEM financial information to be accurately reported in compliance with applicable Arizona Revised Statutes (ARS) requirements. No material exceptions or control weaknesses were found.

# Introduction

## Background

The Maricopa County Department of Emergency Management (MCEM) was originally established in 1953 as the Civil Defense and Disaster Organization, a joint city-county agency, through resolutions adopted by the Maricopa County Board of Supervisors (Board) and the Phoenix City Council. The department was created under authority granted by the Arizona Civil Defense Act of 1951.

MCEM activities are governed by several regulations established by the Federal Emergency Management Agency (FEMA), State of Arizona, Nuclear Regulatory Commission, and the County. The County's emergency operations are coordinated through the Emergency Operations Center, which is staffed by MCEM personnel and other County agencies. The department has also established formal partnerships, through Intergovernmental Agreements (IGA), with twenty-four local municipalities.

## Mission

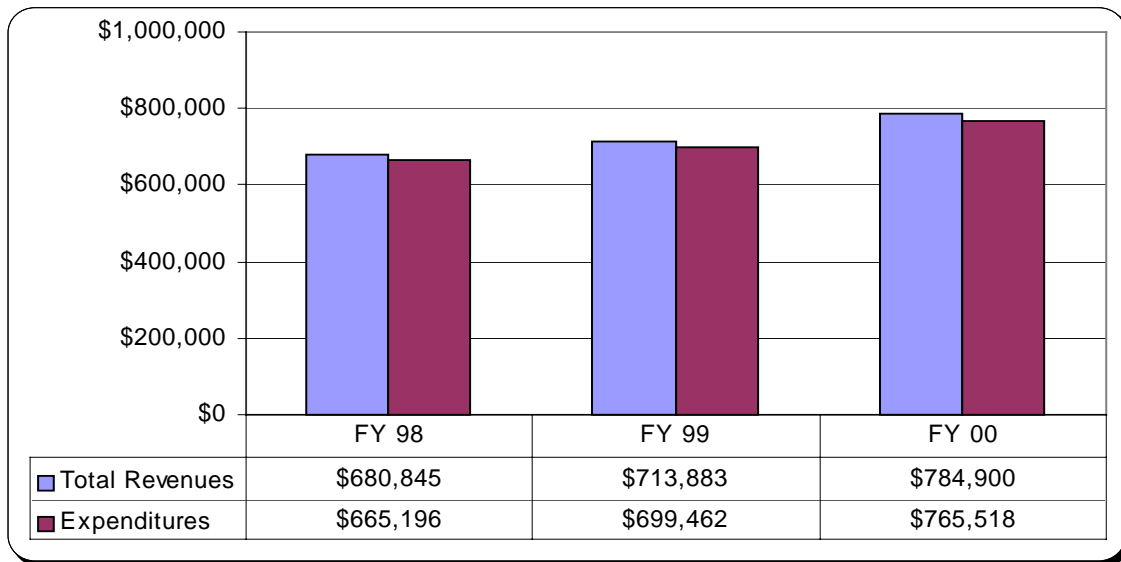
MCEM's mission is "to ensure the greatest possible survival of the population, protection of property, and continuity of government in the event of national security, technological, or natural disaster." The department has developed and refined a comprehensive program to effectively respond to and recover from these disasters. MCEM has also established seven operational goals and reports the status of these goals to the CAO on a quarterly basis.

## Financial Information

Based on information obtained from Maricopa County Comprehensive Annual Financial Reports (CAFR), the chart on the following page depicts MCEM's revenues and expenditures for Fiscal Year (FY) 1998-99 through FY 1999-2000. The department is funded primarily through Special Revenues.

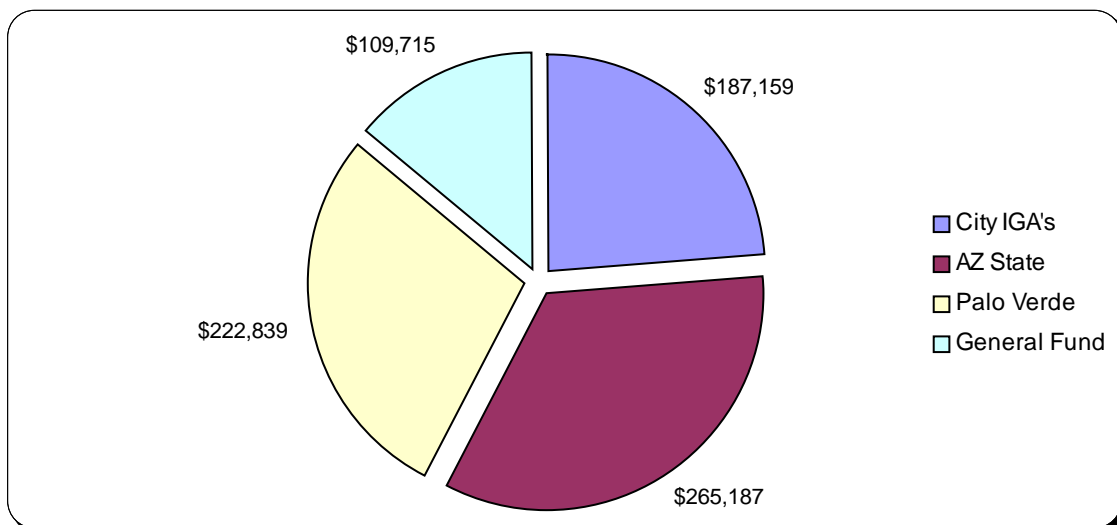


## MCEM Revenues and Expenditures



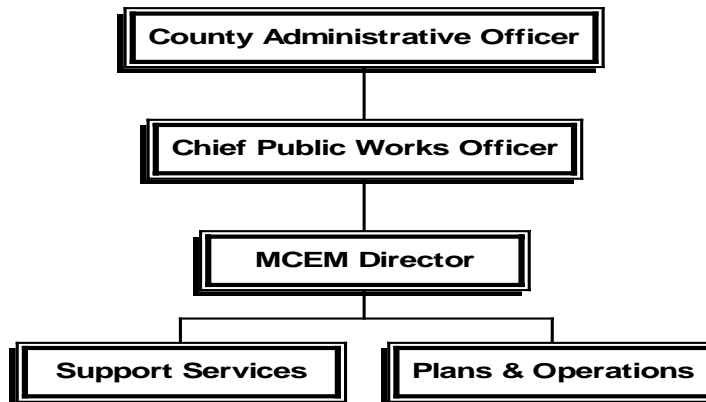
MCEM receives funding from four revenue sources: Federal emergency funds passed through the State, city/town IGA payments, Palo Verde/APS tax dollars, and the County General Fund. A breakdown of the department's FY 1999-2000 revenues is shown graphically below.

## MCEM FY 1999-2000 Revenue Sources



## Organizational Structure

MCEM is authorized 15 positions and the Director reports to the County's Chief Public Works Officer. The chart below depicts the department's organization.



The Maricopa County Department of Transportation's (MCDOT) Information Technology Center (ITC) group provides technical support for MCEM's network, desktop personal computers, servers, and supplemental help desk support. MCEM's main server is located at the department's leased 52nd Street/McDowell office. A software contractor maintains the department's main system.

## Program Activities

The two greatest potential disasters that the County is exposed to are nuclear accidents and floods. MCEM develops emergency plans, performs exercises, and educates the public to help local municipalities and County residents prepare for possible disasters. These plans and activities are described below.

### Emergency Operations Plan Development and Exercises

MCEM developed the Maricopa County Emergency Operations Plan in support of the State of Arizona Emergency Response and Recovery Plan. The plan outlines procedures, for all County agencies, to effectively address peace time and wartime disasters.

The Maricopa County Local Emergency Planning Committee (MCLEPC) was created in response to the Emergency Planning and Community Right-To-Know Act. This committee consists of representatives from law enforcement, civil defense, fire, health, environmental and transportation agencies, hospitals, media and community groups. MCLEPC is responsible for maintaining the County's emergency plan that outlines preparation and response to chemical emergencies.

### Palo Verde Nuclear Plant Plans and Exercises

The Robert T. Stafford Disaster Relief and Emergency Assistance Act governs how the Federal government will respond to disasters, both natural and manmade. FEMA grades nuclear emergency exercises, conducted by Federal agencies, every two years.

### Hazardous Materials

Arizona law established the Local Emergency Planning Committee (LEPC), at the County level. The law places the “repository” responsibility with the LEPC, which by default becomes MCEM. The department maintains copies of the Tier II reports in its files, along with any follow-up reports on spills, and tracks companies’ responsiveness to inquiries about the reports.

### Public Education

MCEM answers the public’s questions about potential hazards and the location of companies and chemicals. MCEM also conducts educational seminars on Desert Awareness, Venomous Insects/Reptiles, and Family Disaster Planning.

### City Emergency Planning Oversight

FEMA requires all political subdivisions to develop an emergency plan. Cities send their finalized plans to MCEM, which maintains a copy and forwards the plans to the Arizona Emergency Management Department. This office then sends the document to FEMA. MCEM planners train city management through three types of emergency management exercises.

## **Scope and Methodology**

Our audit objectives were to:

- Verify the amounts of MCEM’s reported revenues
- Assess the adequacy of MCEM’s controls over contract and IGA administration, payments, and monitoring activities
- Determine if the County is exposed to legal or financial risk if cities/town do not develop adequate emergency plans
- Determine the adequacy of internal controls over the department’s information systems.

The audit was performed in accordance with Government Auditing Standards.

--blank page--

## Department-Reported Accomplishments

**The following FY 1999-2000 accomplishments were provided to the Internal Audit Department by MCEM management for inclusion in this report.**

- The Geographical Information System (GIS) collaborative project between the Department, the Food Control District, and MCDOT came to fruition with an emergency Exercise held in August. The GIS performed well and will speed emergency response during disasters. The system will be continually upgraded.
- The Board approved a temporary emergency response plan for the Y2K turnover. MCEM was activated the night of 9-8-99 to exercise communications capabilities. The department supplied personnel for separate Y2K exercises with the State of Arizona and the cities of Glendale, Goodyear, Phoenix, and Tempe. The department activated the County's emergency operations center for potential Y2K-related problems on New Year's eve. No significant problems were encountered in County government or in any of the cities and towns.
- Participated in a tabletop exercise related to chemical weapons terrorism in Mesa to prepare the nation's largest cities against attacks using weapons of mass destruction. Assisted the City of Mesa conduct a full-scale exercise at Williams Gateway Airport. The scenario included a plane hijacking and employment of a chemical weapon. Hundreds of responders participated in this exercise.
- The County declared an emergency on 9/20/99 because of damages caused by monsoon storms. Our Department assisted FEMA teams collect damage information for their report. This brought \$3.9 million into the County for low cost business loans, disaster housing, individual and family grants, and crisis counseling. The Department received a plaque and letter of thanks from the mayor of Mesa.
- Secured IGA's with the towns of Cave Creek, Guadalupe, and Paradise Valley. The department now has IGA's with all 24 cities and towns in the County.
- Assisted various schools and hospitals in conducting disaster exercises, throughout the year, and provided desert awareness training to 450 elementary school students to improve their ability to think their way through possible survival situations.
- Conducted in-house training and an exercise to prepare for the full-scale disaster exercise scheduled with the Palo Verde Nuclear Generating Station. The new GIS and electronic messaging system were tested and have improved disaster response capabilities. Over 90 employees from numerous departments received this training.
- Successfully participated in the annual disaster exercise with the Palo Verde Nuclear Generating Station, which demonstrates that the PVNGS Off-site Plan will work in a real nuclear emergency to evacuate and care for citizens living in the 10-mile emergency-planning zone.
- Restocked 90 libraries, community centers, and senior centers with emergency preparedness related reading materials to improve the availability of self-learning preparedness information.
- Received Fiscal Fitness Award from the Office of Management and Budget.

# Issue 1 System Security

## Summary

MCEM's password controls are not adequate to ensure the security and integrity of the department's Emergency Information System. Network passwords do not expire. Additionally, passwords are not required to access MCEM's major system and some users are not properly restricted to update functions. MCEM should improve its password controls and restrict access, as appropriate, to its systems.

## Recommended Controls

Best business practice recommends that users change passwords at intervals not exceeding 90 days to provide the best protection. Weak policies regarding the assignment of password privileges are frequently the root cause of fraud. Access to data should be granted only on a need-to-know basis.

## Review Results

MCEM's network passwords do not automatically expire and force users to periodically select a new password. Additionally, only a user ID is necessary to access the department's Emergency Information System (EIS); passwords are not required. Once users have accessed EIS, they are not restricted as to what they can do. In other words, if a user needs only view access that person is also able to change and delete data.

Passwords that are not changed regularly are more easily compromised. Without requiring passwords to access critical business systems MCEM risks:

- Allowing unauthorized access to important data and confidential information
- Potential destruction and or unauthorized changes to data.

The capability exists at the network level to force password changes, however, the technical support provider has not implemented this feature. The capability also exists to require passwords for, and limit access capabilities to, EIS but this control has not been implemented.

## Recommendation

MCEM should:

- A. Require MCDOT to force network password changes at least every 90 days
- B. Require and implement passwords to access EIS
- C. Restrict user access to update data, unless necessary to perform their job.

## **Issue 2 Disaster Recovery Plan**

### **Summary**

MCEM has not developed a documented and tested disaster recovery plan. The department does not have assurance its systems can be timely recovered in the event of a disaster. MCEM should develop, document, and periodically test its disaster recovery plan.

### **Applicable Requirements**

The General Accounting Office's Federal Information System Controls Manual (FISCAM) requires that entities establish procedures to protect information resources and minimize the risk of unplanned interruptions. FISCAM also requires that departments develop a plan to recover critical operations if interruptions occur.

### **Review Results**

MCEM has not developed a documented and tested disaster recovery plan. MCDOT's plan is to purchase a new server and restore MCEM's systems from backup tapes if the department's facility was destroyed or made inaccessible.

MCEM does not have assurance that the department can timely recover its major system if a disaster were to occur. Due to the nature of the department's business, any interruptions may increase the County's liability risk.

### **Recommendation**

MCEM should develop, document, and test its disaster recovery plan to ensure continuity of systems in the event of a disaster.

## **Issue 3 Information System Service Charges**

### **Summary**

We found invoices and supporting documentation, detailing information system services provided to MCEM by MCDOT, to be complete and accurate. We also found that MCEM approves payment of some invoices and journal voucher billings, for these services, without first reviewing back-up documentation supporting the charges. This omission exposes the County to financial risk. MCEM should strengthen controls over these areas.

### **Legal Requirements**

County contracts generally include payment and pricing terms for services rendered. The American Institute of Certified Public Accountants' (AICPA) guidelines for invoice processing advocate "comparison of invoice quantities, prices, and terms with those indicated on the purchase order" or contract. ARS and Arizona's Highway User Revenue Fund laws requires MCDOT to recover all its costs incurred for providing services to other departments.

### **Information System Support**

MCDOT's Information Technology Center (ITC) provides technical support to MCEM's network including desktops, servers, and any supplemental help desk support. MCDOT installs the software updates received from MCEM's software vendor and occasionally changes the settings in INI files as required, however, a formal inter-agency agreement has not been developed. The absence of written a service/pricing agreement exposes MCEM to financial risk.

To obtain service, MCEM submits a request to MCDOT, which creates a work order for MCEM to review and approve. When the work is completed, MCDOT submits a journal voucher to the Department of Finance (DOF) for the total charges. However, MCDOT does not submit a billing to MCEM. The department's Financial Administrator reviews the charges for reasonableness only after the journal voucher appears on MCEM's financial reports.

We obtained documentation from MCDOT validating its MCEM journal voucher debit entry, which contains charges for services rendered to MCEM during FY 1999-2000. All charges appear to be complete (labor costs, overhead, etc.) and accurate, based on our review of the billing rates and number of hours charged.



## **Contractor Services**

MCEM's software vendor (Essential Technologies) maintains EIS, which was purchased in 1988. The department pays an annual fee for technical support and software upgrades. MCEM also pays for any additional licenses/work stations. The vendor has a contract with the State of Arizona, therefore, MCEM's system maintenance and other purchases are eligible for the prices authorized by the contract.

We reviewed system maintenance and other billings submitted to MCEM from Essential Technologies for the last two fiscal years. We found that the department does not maintain copies of Essential Technologies' prices that have been approved for governmental agencies. The absence of documented authorized prices exposes MCEM to financial risk.

MCEM staff later obtained a written explanation of all charges from the vendor. We were able to verify that the \$16,000 charged by the vendor to MCEM, for one year, was accurate and authorized by contract. No exceptions were found.

## **Recommendation**

MCEM should:

- A. Request MCDOT to provide its office with a billing that includes documentation adequately supporting all charges. This information should then be compared to the approved work orders.
- B. Maintain copies of Essential Technologies' authorized government price list and compare these rates to the billing invoices submitted by the vendor.

## Issue 4 Emergency Plans

### Summary

The County does not appear to be exposed to any significant legal or financial risks if local City/town emergency plans are found to be inadequate. The County may experience adverse publicity, from the public and media, if these emergency plans do not function as intended.

### ARS and IGA Requirements

ARS Title 26, Chapter 2, requires all political subdivisions to establish an emergency plan in support of the State of Arizona Emergency Response Plan. MCEM has entered into IGA's with cities/towns to assist these jurisdictions to develop emergency plans. The IGA's do not address risk or liability for either party.

Our review found no legislated responsibility for plan review/update or content. Federal, State, County, and other local agencies agree that sound emergency exercises and plan practices are critical to a good response, however, no formal standards have been established. The one exception is exercise requirements for nuclear plant emergencies, which is addressed by a separate disaster plan.

FEMA reports that its office used to set plan criteria and conduct spot reviews of local plans. The agency later eliminated this practice, emphasizing that states and local governments should be responsible for determining the depth of the plans and types and frequencies of exercises. FEMA identified criticism, from both the public and media, as the County's primary risk and cited Florida as an example. Following Hurricane Andrew, all entities (counties, cities, and state) were blamed for performing poor disaster responses.

The Arizona Department of Emergency Management also could not identify any specific County legal or financial risks associated with city/town emergency plans.

### Recommendation

None, for information only.

## Issue 5 Financial Reporting

### Summary

Our review of the County's recording and reporting of MCEM revenues and expenditures shows MCEM financial information to be accurately reported in compliance with applicable ARS requirements. No material exceptions or control weaknesses were found.

### Applicable Requirements

ARS mandates that counties publish a CAFR and that an entity wide single audit be performed to verify the accuracy of the CAFR's reported information. Maricopa County's CAFR is prepared in conformance with generally accepted accounting principles as prescribed by the Governmental Accounting Standards Board. The CAFR is audited by the Arizona Auditor General's office to ensure reporting accuracy.

### Review Results

Information collected during the preliminary phase of this audit showed variances of MCEM's revenue, between the County's Advantage 2.0 financial reporting system and information reported in the CAFR. Interviews with DOF managers revealed that MCEM financial information is reported in the CAFR under two different funds and three separate accounting categories. Inclusion of this additional financial information allowed for the tracing and agreeing of the Advantage 2.0 data to the CAFR without exception.

Our review of the IGA's that MCEM has established with 24 local cities and towns found no limitations as to how the County must utilize this revenue, which was \$187,000 during FY 1999-2000. ARS and applicable Federal regulations also do not stipulate as to how the County must use these funds.

### Recommendation

None, for information only.

--blank page--

## **DEPARTMENT RESPONSE**